

Notice of Allowability

Application No.

10/722,540

Examiner

Adam R. Giesy

Applicant(s)

CHO ET AL.

Art Unit

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 11/28/2003.
2. ☒ The allowed claim(s) is/are 1-16.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☒ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

Allowable Subject Matter

1. The following is an examiner's statement of reasons for allowance:

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Claims 1-16 are allowed over the prior art of record.

Independent claim 1 is allowable since the claim recites a dielectric reproducing head for reproducing data from a dielectric medium comprising: a probe for applying a high-frequency signal to the dielectric medium to detect a nonlinear dielectric constant; a plurality of bias electrodes placed around the probe for forming an electric field parallel to a surface of the dielectric medium; and a return electrode.

Independent claim 7 is allowable since the claim recites a dielectric recording head for recording data on a dielectric medium comprising: a probe; and a plurality of bias electrodes placed around the probe for forming an electric field parallel to a surface of the dielectric medium.

Independent claim 10 is allowable since the claim recites a dielectric reproducing apparatus for reproducing data from a dielectric medium comprising: a dielectric reproducing head comprising a probe for applying a high-frequency signal to the dielectric medium to detect a nonlinear dielectric constant, a plurality of bias electrodes placed around the probe for forming an electric field parallel to a surface of the dielectric

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medium, and a return electrode; an AC signal generator; an oscillating device; a demodulating device; and a data reproducing device.

Independent claim 13 is allowable since the claim recites a dielectric recording apparatus for recording data on a dielectric medium comprising: a dielectric recording head comprising a probe and a plurality of bias electrodes placed around the probe for forming an electric field parallel to a surface of the dielectric medium; a recording signal generating device; and a signal applying device.

Independent claim 14 is allowable since the claim recites a dielectric recording/reproducing apparatus for recording/reproducing data on a dielectric medium comprising: a dielectric recording/reproducing head comprising a probe, a plurality of bias electrodes, and a return electrode near the probe; an oscillating device; and AC signal generator; a demodulating device; a data reproduction device; a recording signal generating device; and a signal applying device.

Claims 2-6, 8, 9, 11, 12, 15, and 16 are allowed as being dependent upon the aforementioned independent claims.

The closest prior art by Hirokane et al (US Pat. No. 6,418,091 B1) discloses a recording medium with a dielectric layer and a plurality of electrodes. Hirokane fails to disclose a probe for recoding/reproducing data stored on the dielectric medium. Hirokane also fails to disclose an electric field that run parallel to the dielectric medium.

Conclusion

2. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Cho et al. (US Doc. No. 2003/0053400 A1) discloses a dielectric recording apparatus including a probe, a plurality of electrodes, signal generators and an oscillator.
- b. Onoe et al. (US Pat. No. 6,841,220 B2) discloses a dielectric recording medium that is recorded onto by a probe with a plurality of electrodes, an oscillator, and a signal generator.
- c. Cho et al. (US Doc. No. 2004/0090903 A1) discloses a dielectric recording apparatus including a probe, a plurality of electrodes, signal generators and an oscillator.
- d. Onoe et al. (US Doc. No. 2004/0047245 A1) discloses a dielectric reproducing head including a probe, a plurality of electrodes, signal detectors and an oscillator.
- e. Onoe et al. (US Doc. No. 2004/0042351 A1) discloses a dielectric recording/reproducing head including a probe, a plurality of electrodes, signal detectors and an oscillator.
- f. Cho et al. (US Doc. No. 2004/0027935 A1) discloses a dielectric recording/reproducing head including a probe, a plurality of electrodes, signal detectors and an oscillator.
- g. Onoe et al. (US Doc. No. 2003/0169672 A1) discloses a dielectric recording apparatus including a probe, a plurality of electrodes, signal detectors and an oscillator.

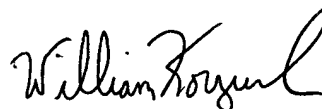
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3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adam R. Giesy whose telephone number is (571) 272-7555. The examiner can normally be reached on 8:00am- 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William R. Korzuch can be reached on (571) 272-7589. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ARG 8/28/2006



WILLIAM KORZUCH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600